

Recycling Unused Drugs Helps Water Recycling

By Fawzi Karajeh

Emerging contaminants, xenobiotics, endocrine disruptors, endocrine active chemicals, pharmaceuticals and personal care products, hormonally active agents, persistent organic pollutants, bioaccumulative chemicals of concern ... and more.

These are some of the plethora of chemicals, pollutants and toxins we hear and read about more frequently making their way into our streams, lakes and groundwater. Even though these pollutants have gained our attention only recently, they likely have been in our water supplies for many years. Most of these contaminants come from:

- Personal care products such as fragrances, deodorants, disinfectants, cosmetics, sun screens, and insect repellants
- Pharmaceutical products such as prescription and over-the-counter drugs, antibiotics, and diagnostic agents
- Detergents and other cleaning agents
- Household chemicals
- Agricultural fertilizers, pesticides, fungicides and animal growth hormones

The continuous widespread use and discharge of these products exacerbates their persistence in our water.

Emerging contaminants is important not only to the wastewater or water recycling community but also to the water supply, environmental ecology, and public health communities.

There are several studies of the pathways these contaminants use to enter the water supply and ways to remove them. While we can't prevent all contaminants from getting into our water, particularly recycled



water, we can reduce it significantly by recycling the unused portions of the source products. One way is nonpoint source control of household waste, illegal dumping, improper disposal of unused prescription and over-the-counter drugs.

In an article published by the Sacramento Bee on December 27, 2005, titled "Waste not, want not" by Clea Benson, it was reported that about \$1 billion of unused prescriptions are thrown away each year in United States. And in the Stanford Report, a Stanford University publication, it was estimated \$100 million in unused prescriptions were thrown away each year in California.

Disposing unused prescription and over-the counter drugs involves multiple waste issues. First, it's wasting a lot of money. Second, it's posing health risks. Third, we may have to abandon some of our water sources if these contaminants reach unhealthy concentrations. And fourth, it will

cost millions of dollars to remove them – if it's even possible.

Complementing the research to eliminate or minimize the effects of emerging contaminants on our water, institutional and outreach also are needed. I was impressed when I read about a medical students at Stanford University. They prompted legislation (Senate Bill 798) introduced by Sen. Joe Simitian in February 2005 and signed by Governor Arnold Schwarzenegger on September 30, 2005. The bill authorizes counties to collect unused drugs from nursing homes, wholesalers and manufacturers, and redistribute them to the low-income uninsured. Recycling unused drugs to those who are in need but cannot afford them while keeping our water systems including water recycling facilities free of these contaminants makes a lot of sense. Such initiative will help communities expand their use of recycled water and evade costly water treatment measures.